

AMENDMENTS TO THE SPECIFICATION

Please replace the last paragraph beginning on page 2 and continuing through page 3 (page 2, line 24 - page 3, line 10), with the following amended paragraph:

Figs. 1 and 2 show a conventional drilling rig slip-type elevator 1 with a tubular P extending through the central opening and terminating with a collar 2. Elevator 1 is typically suspended via bails 8 connected to the elevator, in a conventional manner at 1a. Sensors 4 respond to changes in detectable characteristics of tubular P. The sensors 4 are illustrated, in Figs. 1 and 2, to provide a general notion of location. It should be noted that the sensors 4 can be a variety of types and shapes and thus present a variety of different mounting requirements. Further detail of the sensors 4 and their preferable ways of mounting will be described in more detail herein below. Because the elevator 1 and slips 9 (see Fig. 5) are sized as to be raised or lowered over a tubular P, there is at least some clearance between the outer diameter of tubular P and the inner diameter of the elevator 1 and slips 9. This clearance typically varies depending on the size of the tubular P and the elevator 1. Thus, the tubular may move in a lateral direction before the slips are set. It should be appreciated that the described lateral tubular movement would include any lateral movement of the elevator. Many types of sensors 4, can properly function even when the sensor target, such as tubular P, is some certain distance away from the sensor. However, when the distance limitation is exceeded, possibly such as when the lateral movement of tubular P is at some maximum distance, the sensors 4 may not be able to properly function. It should be appreciated that the sensors' 4 proximity to the target, within the sensors' distance limitations, may be aided through the use of a transition plate 3.

Please replace the last paragraph beginning on page 3 and continuing through page 5 (page 3, line 32- page 5, line 7), with the following amended paragraph:

The light curtain 13 is usable as a remote sensor to preferably measure features by the number of light beams occluded. Housing Projector housing 10 preferably projects the plural beams of light 12 across the area to be partly occluded by tubular P as the tubular P passes through the elevator 1. As tubular P passes through and occludes some of the plural beams of

light 12, receiver housing 11 preferably receives the surviving light beams, i.e. those beams of light that are not occluded by the tubular P, and may produce a consequent signal output usable by the operating personnel or any ancillary apparatus used to convert the information sent from the light curtain 13. Preferably, the projector housing 10 is of a size suitable to project the plural beams of light 12 to cover an area equal to or greater than the diameter of the elevator 1 throughbore. ~~through bore~~. Preferably, the light beams 12 are equally spaced some predetermined distance apart and form a substantially horizontal plane which is substantially perpendicular to the elevator through bore and the length of such plane is greater than or equal to the through bore diameter. Preferably, receiver housing 11 is of a suitable size such that it can receive all of the plural light beams 12 projected by projector housing 10. Preferably, as the tubular P enters the projected light beams 12, it will begin to occlude light beams 12 in a manner such that only the light beams on each distal end of the horizontal plane will pass un-occluded to the receiver in receiver housing 11. The length of the occluded horizontal plane will preferably indicate the outside diameter of the tubular P. As illustrated in Fig. 1, the tubular P preferably has a collar 2 which passes through the light beams 12. It should be appreciated, by those in the art, that the collar 2 can be a coupling, a connector, an upset end, or the like. Thus, as the coupling, upset end, or collar 2 portion passes through the light beams 12, fewer beams 12 will be occluded indicating that the tubular P, which preferably has a smaller diameter than the collar 2, is positioned at the level of the light beam 12 horizontal plane. The signal processing 25 is preferably situated in one of the housings or can be remotely attached as illustrated in Fig. 4. Also as illustrated in Fig. 4, the signal from the receiver 11 will preferably cause a signal to be sent along communication link 25A to the processor 25 which will preferably translate the signal to some readable output to read out near the operating personnel, to connect to automated controls, computers, or any other desired apparatus which can receive the signal or further process the signal if necessary. It should be appreciated that the light curtain 13, as a conventional and commercially available apparatus, needs not be functionally described in detail herein. It should further be appreciated that the processing 25 is also commercially available and can include, but not be limited to, conventional filters, signal conditioners, computer processors, computer cells, and the like. The choice of selecting the use of the light curtain sensor 13 is primarily a function of the rig environment such that the plural light beams 12 are not occluded other than by the tubular P or any equipment intentionally being passed through the light beams 12. It should be

noted that the use of secondary sensors as a form of a redundant signal can be utilized to confirm the proper function and operation of the light curtain 13.

Please replace the second paragraph of page 13 (page 13, lines 12-16), with the following amended paragraph:

In operation, as the tool 50 and thus the elevator 101 and the sensor 56 are lowered toward tubular P, or raised away from tubular P, the sensor 56 emits a signal which is then preferably reflected back to the sensor's 56 receiving apparatus. Thus, the sensor 56 will provide an indication that the tool 50 is not sufficiently engaged the tubular P to actuate the internal slips 58 59. It should be noted that as illustrated in Figs. 13-13D, a device may have one or both of a flexible guide hose 58 or an internal gripping tool 59. Further, if both are present, preferably the guide hose 58 would be below the slips 59.

Please replace the third paragraph of page 13 (page 13, lines 17-28), with the following amended paragraph:

As illustrated in Fig. 13A, when the tool 50 has been lowered into the tubular P some pre-determined distance, the reflecting surface 52 as well as the reflector 54 are obscured from the sensor's 56 emitted signal. In operation, the sensor will indicate to the drilling personnel or to some automated control system that the tool 50 is sufficiently within the tubular P and that the internal slips 58 59 can be actuated. It should be appreciated that the signal from the sensor 56 can be sent to a variety of processors, computer cells, or controllers as described herein above for other sensors. It should further be appreciated that such signals can provide rig personnel with audible and visual indicators as well as automatically set the slips. However, due to many of the current safety systems the automatic setting of the slips may be prohibited as some manual operations are reserved for the rig operators to prevent some critical equipment from malfunctioning when operated under complete automatic control.